

IN THE CLAIMS

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Original) A wireless communication device capable of downloading a software update file from a wireless network, said wireless communication device comprising:
 - a non-volatile memory capable of being re-programmed by sectors, wherein said non-volatile memory stores: 1) a target file to be updated, 2) said downloaded software update file, and 3) a journal comprising a plurality of entries, each of said plurality of entries containing status information associated with a re-programmed sector of said non-volatile memory;
 - a random access memory; and
 - a main processor capable of replacing target code in said target file with replacement code from said downloaded software update file, wherein said main processor creates a first block of replacement code in said random access memory and re-programs a first target sector of said non-volatile memory by storing said first block of replacement code into said first target sector, and wherein said main processor updates first status information in a first entry in said journal associated with said first target sector.

2. (Original) The wireless communication device as set forth in Claim 1 wherein said first status information comprises a first parameter indicating that said first block of replacement code was successfully stored in said first target sector.

3. (Original) The wireless communication device as set forth in Claim 2 wherein said main processor is further capable of storing first target code from said first target sector in a save-area of said non-volatile memory prior to storing said first block of replacement code into said first target sector.

4. (Original) The wireless communication device as set forth in Claim 3 wherein said first status information comprises a second parameter indicating that said first target code from said first target sector was successfully stored in said save-area of said non-volatile memory.

5. (Original) The wireless communication device as set forth in Claim 4 wherein said main processor is further capable of storing said first target code from said save-area back into said first target sector after a power loss in said mobile station.

6. (Original) The wireless communication device as set forth in Claim 5 wherein said first block of replacement code in said random access memory is equivalent in size to a sector of said non-volatile memory.

7. (Original) The wireless communication device as set forth in Claim 6 wherein said main processor, after said wireless communication device is restarted after a power loss, uses status information stored in said journal to identify a last successfully re-programmed sector in said non-volatile memory.

8. (Original) The wireless communication device as set forth in Claim 7 wherein said main processor resumes replacing target code in said target file with replacement code from said downloaded software update file by re-programming a next sequential sector in said non-volatile memory following said last successfully re-programmed sector.

9. (Original) The wireless communication device as set forth in Claim 8 wherein said journal is stored in at least a first journal sector and a second journal sector of said non-volatile memory.

10. (Original) The wireless communication device as set forth in Claim 9 wherein said main processor, in response to a determination that said first journal sector is full of journal entries, erases said second journal sector and stores a next journal entry in said second journal sector.

11. (Original) A method of upgrading software in a wireless communication device capable of downloading a software update file from a wireless network, the wireless communication device comprising a non-volatile memory that is re-programmed by sectors and stores: 1) a target file to be updated, 2) the downloaded software update file, and 3) a journal comprising a plurality of entries, each of the plurality of entries containing status information associated with a re-programmed sector of the non-volatile memory, the method of upgrading software comprising the steps of:

creating a first block of replacement code in a random access memory of the wireless communication device using replacement code from the downloaded software update file; re-programming a first target sector of the non-volatile memory by storing the first block of replacement code into the first target sector; and updating first status information in a first entry in the journal associated with the first target sector.

12. (Original) The method as set forth in Claim 11 wherein the first status information comprises a first parameter indicating that the first block of replacement code was successfully stored in the first target sector.

13. (Original) The method as set forth in Claim 12 further comprising the step of storing first target code from the first target sector in a save-area of the non-volatile memory prior to storing the first block of replacement code into the first target sector.

14. (Original) The method as set forth in Claim 13 wherein the first status information comprises a second parameter indicating that the first target code from the first target sector was successfully stored in the save-area of the non-volatile memory.

15. (Original) The method as set forth in Claim 14 further comprising the step of storing the first target code from the save-area back into the first target sector after a power loss in the mobile station.

16. (Original) The method as set forth in Claim 15 wherein the first block of replacement code in the random access memory is equivalent in size to a sector of the non-volatile memory.

17. (Original) The method as set forth in Claim 16 further comprising the step, after the wireless communication device is restarted after a power loss, if using status information stored in the journal to identify a last successfully re-programmed sector in the non-volatile memory.

18. (Original) The method as set forth in Claim 17 further comprising the step of resuming replacing target code in the target file with replacement code from the downloaded software update file by re-programming a next sequential sector in the non-volatile memory following the last successfully re-programmed sector.

19. (Original) The method as set forth in Claim 18 wherein the journal is stored in at least a first journal sector and a second journal sector of the non-volatile memory.

20. (Original) The method as set forth in Claim 19 further comprising the steps, in response to a determination that the first journal sector is full of journal entries, of erasing the second journal sector and storing a next journal entry in the second journal sector.

21. (Original) A wireless communication device capable of receiving an incoming software update file transmitted by a wireless network, said wireless communication device comprising:

a non-volatile memory capable of being re-programmed by sectors, wherein said non-volatile memory stores: 1) a downloaded software update file, and 2) a journal comprising a plurality of entries, each of said plurality of entries containing status information associated with a re-programmed sector of said non-volatile memory;

a random access memory; and

a main processor capable of storing replacement code from said incoming software update file in said downloaded software update file, wherein said main processor stores a first block of replacement code from said incoming software update file in said random access memory and reprograms a first target sector of said downloaded software update file in said non-volatile memory by storing said first block of replacement code into said first target sector, and wherein said main processor updates first status information in a first entry in said journal associated with said first target sector.

22. (Original) The wireless communication device as set forth in Claim 21 wherein said first status information comprises a first parameter indicating that said first block of replacement code was successfully stored in said first target sector.

23. (Original) The wireless communication device as set forth in Claim 22 wherein said main processor is further capable of storing first target code from said first target sector in a save-area of said non-volatile memory prior to storing said first block of replacement code into said first target sector.

24. (Original) The wireless communication device as set forth in Claim 23 wherein said first status information comprises a second parameter indicating that said first target code from said first target sector was successfully stored in said save-area of said non-volatile memory.

25. (Original) The wireless communication device as set forth in Claim 24 wherein the main processor is further capable of storing the first target code from the save-area back into the first target sector after a power loss in the mobile station.

26. (Original) A method of downloading software in a wireless communication device capable of receiving an incoming software update file transmitted by a wireless network, the wireless communication device comprising a non-volatile memory that is re-programmed by sectors and stores: 1) a downloaded software update file, and 2) a journal comprising a plurality of entries, each of the plurality of entries containing status information associated with a re-programmed sector of the non-volatile memory, the method of upgrading software comprising the steps of:

storing a first block of replacement code from the incoming software update file in the random access memory;

re-programming a first target sector of the downloaded software update file in the non-volatile memory by storing the first block of replacement code into the first target sector; and

updating first status information in a first entry in the journal associated with the first target sector.

27. (Original) The method as set forth in Claim 26 wherein the first status information comprises a first parameter indicating that the first block of replacement code was successfully stored in the first target sector.

28. (Original) The method as set forth in Claim 27 further comprising the step of storing first target code from the first target sector in a save-area of the non-volatile memory prior to storing the first block of replacement code into the first target sector.

29. (Original) The method as set forth in Claim 28 wherein the first status information comprises a second parameter indicating that the first target code from the first target sector was successfully stored in the save-area of the non-volatile memory.

30. (Original) The method as set forth in Claim 29 further comprising the step of storing the first target code from the save-area back into the first target sector after a power loss in the mobile station.